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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of BRIOT ET AL

Serial No. 09/644,605 Group Art Unit : 1764

Filed: August 24th, 2000 Examiner: Nadine Norton

For : PROCESS FOR PRODUCING OILS WITH A HIGH VISCOSITY INDEX

DECLARATION UNDER 37 C.F.R. § 1.132

Honorable Commissioner
of Patent and Trademarks
Washington, D.C. 20231

Sir :

I, Germain Martino, duly warned, declare and say as follows:

THAT, I am a French citizen; that I graduated from "Faculté des Sciences de l'Université de Strasbourg" (France) in 1961; that I obtained an Engineer Diploma from "Ecole Nationale Supérieure de Pétrole et des Moteurs" Rueil-Malmaison (France) in 1963; that I was received as a Doctor by "Université de Louvain" (Belgium) in 1965; and that I now reside in 78300 Poissy (France), 80 avenue Fernand-Lefebvre;

THAT, I was hired by "Institut Français du Pétrole" Rueil-Malmaison (France) in their Research Department to research on catalytic agents and catalytic reactions in May 1967; that, from January 1985 to September 1989, I was Manager of the Kinetics and Catalysis Research Division; that, from September 1989 to December 1997, I was Assistant Manager of the whole Refining and Petrochemical Technology Business Unit; and that since then I have been Manager of said Refining and Petrochemical Technology Business Unit.

THAT, I am familiar with the processes and catalysts.

I declare further:

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Fax International - Patent Department : 33 1 47 52 70 03
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Example 3 (comparative)

The present example illustrates the impact on the process of the invention, when there is no recycling of any fraction obtained during thermal diffusion step c).

The operating conditions and the nature of the feedstock are identical to the one used in Example 2, apart from the recycling that does not take place.

The properties of the residue obtained prior to the thermal diffusion fractionation (and after the solvent dewaxing step) are presented in table 5. The corresponding properties of the residue obtained in Example 2 , with the recycling of the fractions 7 to 9, are compared and presented in the same table 5.

TABLE 5

Characteristics	Feed	Residue (with recycle) Example 2	Residue (without recycle) Example 3
Density at 15°C (kg/m^3)	969	847.9	846.1
Refractive index at 20°C	1.5474	1.4687	1.4543
Kinematic viscosity at 40°C (mm2/s)	250	35.51	34.49
Kinematic viscosity at 100°C (mm2/s)	15.13	6.31	6.25
Viscosity Index	34	129	132
Pour Point (°C)	- 27	- 21	- 21
Ca (%)	29.3	2.80	2.1
Cp (%)	60.5	84.79	86.3
Cn (%)	10.2	12.41	11.6

It appears that, without recycle, the residue obtained prior to the thermal diffusion fractionation, exhibits improved properties. More particularly, the viscosity index of the residue obtained without recycle, i.e. 132, is higher compare to the one of the residue obtained in Example 2, i.e. 129.

The residue obtained is then fractionated by thermal diffusion under the same condition than in Example 2, except that there is no recycling taking place.

As in Example 2, the fractionation by thermal diffusion led to nine fractions. Those fractions were blended in two streams I and II. Since there was no recycling taking place, the objective was to make one of the stream containing a maximum amount of oil residue within the specification in regard to the viscosity index.

The average viscosity index target was chosen close to 158, in order to carry out a comparison with Example 2.

In order to obtain a blend with a maximum yield and resulting to an average viscosity index close to 158, fractions 1 to 6 were blended together to form stream I. The other fractions 7 to 9 were blended to form stream II, that did not conform to the viscosity index specification. The properties of the two streams I and II, resulting from the blending operation previously described, are presented in Table 6 below.

TABLE 6

EXAMPLE 3 (Comparative)	Stream I	Stream II
Yields (weight%)	66	34
Kinematic viscosity at 40°C (mm2/s)	22.92	87.85
Kinematic viscosity at 100°C (mm2/s)	5.13	9.6
Viscosity Index	162	84

Stream I was obtained with a yield of 66 % by weight and exhibits a remarkable viscosity index of 162. However, the remaining part, i.e. stream II, was of limited interest due to a low viscosity index of 84. The minimum viscosity index required by the law in France is 95.

As mentioned earlier, there was no recycling of any fraction obtained during thermal diffusion step. Therefore, Stream II is considered as off-spec product and the global yield obtained by the process of Example 3 is equal to 66 % by weight.

Comparison with Example 2

By comparison, the non recycled fractions 1 to 6 obtained in Example 2 were blended to form a stream having a viscosity index of approximately 158, which corresponds to the target chosen for Example 3. In addition, this stream was obtained with a yield that is close to 100 % by weight.

In conclusion, the recycling taking place in Example 2, in accordance with the present invention, allows the production, with a maximized yield, of lube oil having a high viscosity index. In Example 2 there is no production of off-spec product.

The undersigned declares further that all statements are made herein of his own knowledge are true and that all statements made on information and belief are believed to be true ; and further that these statements are made with the knowledge that willful false statements and the like so made were punishable by fine or imprisonment, or both under Section 1001 Title 18 of United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Germain Martino

Rueil, February 12, 2003

Germain MARTINO